

ABSTRACT

A planar surface illuminator (20) for installation below a liquid crystal display panel includes a light guide plate (22) and a plurality of point light sources (21). The light guide plate has an optical input surface (221). The point light sources are positioned adjacent to the optical input surface. A number of scattering dot-patterns (23) are positioned on and integrated with the optical input surface. At least three scattering dot-patterns corresponding to one point light source are provided for converting a beam having a Gauss distribution from the point light source to a beam having a uniform light intensity, which illuminates the light guide plate. This promotes a uniform intensity light emission from an optical output surface (222) to illuminate the liquid crystal display panel.